

WE CLAIM:

1. A front end loader comprising:
 - (a) a first bracket assembly comprising a bracket member constructed for attachment to a tractor, and a shoe-receiving region comprising a receiving surface, a pin receiving area, and an insertion pin hole;
 - (b) a second bracket assembly comprising a bracket member constructed for attachment to a tractor, and a receiving area constructed for attachment to a tower subframe;
 - (c) a tower having a first tower end and a second tower end:
 - (i) the second tower end including a shoe area for attaching to the shoe-receiving region provided on the first bracket assembly;
 - (ii) the shoe area comprising a bottom opening constructed to fit over the shoe-receiving region and comprising a pin fixed within the shoe area for engaging the receiving surface of the first bracket assembly for receipt within the pin receiving area of the first bracket assembly; and
 - (iii) the shoe area comprising a hole for receipt of an insertion pin via the insertion pin hole for securing the tower to the first bracket assembly; and
 - (d) a tower subframe having a first tower subframe end and a second tower subframe end:
 - (i) the first tower subframe end being attached to the tower;
 - (ii) the second tower subframe end being constructed for attachment to the second bracket assembly attached to a tractor.
2. A front end loader according to claim 1, further comprising:
 - (a) knee having a first knee rotation axis and a second knee rotation axis;
 - (b) loader arm having a first loader arm end and a second loader arm end:
 - (i) the first loader arm end being rotatably attached to the first tower end of the tower;
 - (ii) the second loader arm end being attached to the knee;
 - (c) front arm having first front arm end and a second front arm end;

- (i) the first front arm end being attached to the knee;
- (ii) the second front arm end being rotatably connectable to an attachment;
- (d) lift cylinder having a first lift cylinder end and a second lift cylinder end;
 - (i) the first lift cylinder end being rotatably connected to the second tower end of the tower;
 - (ii) the second lift cylinder end being attached to the first knee rotation axis of the knee; and
- (e) attachment cylinder having a first attachment cylinder end and a second attachment cylinder end;
 - (i) the first attachment cylinder end being attached to the second knee rotation axis of the knee; and
 - (ii) the second attachment cylinder end being rotatably connectable to an attachment.

3. A front end loader according to claim 2, further comprising an attachment device rotatably attached to the second front arm end of the front arm and to the second attachment cylinder end of the attachment cylinder, the attachment device including a surface for attaching to an attachment.

4. A front end loader according to claim 3, wherein the attachment device is attached to a bucket.

5. A front end loader according to claim 1, wherein the tower subframe comprises an attachment arm, and the receiving area of the second bracket assembly is constructed for attachment to the attachment arm.

6. A tractor comprising a front end loader, the front end loader comprising:

- (a) a first bracket assembly comprising a bracket member attached to the tractor, and a shoe-receiving region comprising a receiving surface, a pin receiving area, and an insertion hole;

- (b) a second bracket assembly comprising a bracket member attached to the tractor, and a receiving area constructed for attachment to a tower subframe;
- (c) a tower having a first tower end and a second tower end;
 - (i) the second tower end including a shoe area attached to the shoe-receiving region provided on the first bracket assembly;
 - (ii) the shoe area comprising a bottom opening constructed to fit over the shoe-receiving region and comprising a pin fixed within the shoe area for engaging the receiving surface of the first bracket assembly for receipt within the pin receiving area of the first bracket assembly;
 - (iii) the shoe area comprising an opening for receipt of an insertion pin via the insertion pin hole for securing the tower to the first bracket assembly; and
- (d) a tower subframe having a first tower subframe end and a second tower subframe end;
 - (i) the first tower subframe end being attached to the tower; and
 - (ii) the second tower subframe end being attached to a second bracket assembly attached to the tractor.

7. A tractor according to claim 6, further comprising:

- (a) knee having a first knee rotation axis and a second knee rotation axis;
- (b) loader arm having a first loader arm end and a second loader arm end;
 - (i) the first loader arm end being rotatably attached to the first tower end of the tower;
 - (ii) the second loader arm end being attached to the knee;
- (c) front arm having first front arm end and a second front arm end;
 - (i) the first front arm end being attached to the knee;
 - (ii) the second front arm end being rotatably connectable to an attachment;
- (d) lift cylinder having a first lift cylinder end and a second lift cylinder end;
 - (i) the first lift cylinder end being rotatably connected to the second tower end of the tower;

- (ii) the second lift cylinder end being attached to the first knee rotation axis of the knee; and
- (e) attachment cylinder having a first attachment cylinder end and a second attachment cylinder end;
 - (i) the first attachment cylinder end being attached to the second knee rotation axis of the knee; and
 - (ii) the second attachment cylinder end being rotatably connectable to an attachment.

8. A method for attaching a front end loader on a tractor, the method comprising steps of:

driving a tractor into a stationary front end loader, the front end loader comprising:

- (a) a first bracket assembly comprising a bracket member attached to the tractor, and a shoe-receiving region comprising a receiving surface, a pin receiving area, and an insertion hole;
- (b) a second bracket assembly comprising a bracket member attached to the tractor, and a receiving area constructed for attachment to a tower subframe;
- (c) a tower having a first tower end and a second tower end;
 - (i) the second tower end including a shoe area for attaching to the shoe-receiving region provided on the first bracket assembly attached to the tractor;
 - (ii) the shoe area comprising a bottom opening constructed to fit over the shoe-receiving region and comprising a pin fixed within the shoe area for engaging the receiving surface of the first bracket assembly for receipt within the receiving area of the first bracket assembly;
 - (iii) an opening for receipt of an insertion pin for securing the tower to the first bracket assembly; and
- (d) a tower subframe having a first tower subframe end and a second tower subframe end;
 - (i) the first tower subframe end being attached to the tower;

(ii) the second tower subframe end being constructed for attachment to the second bracket assembly; and

attaching the second tower subframe end to the second bracket assembly; and

attaching the second tower end to the shoe receiving region provided on the first bracket assembly.

9. A front end loader comprising:

- (a) a first bracket assembly comprising a bracket member constructed for attachment to a tractor, and a shoe-receiving region comprising a pin and an insertion pin hole;
- (b) a second bracket assembly comprising a bracket member constructed for attachment to a tractor, and a receiving area constructed for attachment to a tower subframe;
- (c) a tower having a first tower end and a second tower end;
 - (i) the second tower end including a shoe area constructed to fit within the shoe-receiving region of the first bracket assembly;
 - (ii) the shoe area comprising an arm constructed for engaging the pin provided within the first bracket assembly, and a resting surface for resting on the pin; and
 - (iii) the shoe area comprising an opening for receipt of an insertion pin for securing the tower to the first bracket assembly; and
- (c) a tower subframe having a first tower subframe end and a second tower subframe end;
 - (i) the first tower subframe end being attached to the tower; and
 - (ii) the second tower subframe end being constructed for attachment to the receiving area of the second bracket assembly.

10. A front end loader according to claim 9, wherein the pin comprises a cam structure so that when the pin rotates the shoe area compresses against the shoe-receiving region.

11. A front end loader according to claim 9, wherein the tower subframe comprises an attachment arm, and the receiving area of the second bracket assembly is constructed for attachment to the attachment arm.

12. A front end loader according to claim 9, wherein the shoe-receiving region of the first bracket assembly includes a slot that allows the pin to move between a distal end of the slot and a proximal end of the slot, and the first bracket assembly further comprises a spring that biases the pin toward the distal end of the slot.

13. A front end loader comprising:

- (a) a first bracket assembly constructed for attachment to a tractor, and comprising a shoe-receiving region comprising a slot having a distal end and a proximal end, a pin provided within a slot, an insertion pin hole, and a spring constructed to bias the pin toward the distal end of the slot;
- (b) a second bracket assembly comprising a bracket member constructed for attachment to a tractor, and a receiving area constructed for attachment to tower subframe;
- (c) a tower having a first tower end and a second tower end;
 - (i) the second tower end including a shoe area constructed to fit within the shoe-receiving region of the first bracket assembly;
 - (ii) the shoe area comprising an arm constructed for engaging the pin provided within the first bracket assembly, and a resting surface for resting on the pin; and
 - (iii) the shoe area comprising an opening for receipt of an insertion pin for securing the tower to the first bracket assembly; and
- (d) a tower subframe having a first tower subframe end and a second tower subframe end;
 - (i) the first tower subframe end being attached to the tower; and
 - (ii) the second tower subframe end being constructed for attachment to the receiving area of the second bracket assembly.

14. A front end loader according to claim 13, wherein the pin is constructed to rotate.
15. A front end loader according to claim 13, wherein the shoe-receiving region comprises a first wall and a second wall, and the pin extends between the first wall and the second wall.
16. A front end loader according to claim 13, wherein the tower subframe comprises an attachment arm, and the receiving area of the second bracket assembly is constructed for attachment to the attachment arm.